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Huang

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(54) **DOUBLE SEALING VALVE**

(56) **References Cited**

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U.S. PATENT DOCUMENTS

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442,458 A * 12/1890 Ross F16K 3/184
251/198
1,023,955 A * 4/1912 North F16K 3/186
137/243
1,823,394 A * 9/1931 Geiger F16K 3/3165
251/326
3,216,694 A * 11/1965 Perazone F16K 51/02
251/158

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(Continued)

FOREIGN PATENT DOCUMENTS

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DE 10196376 B4 8/2008
DE 102007034926 A1 2/2009

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See application file for complete search history.

(57) **ABSTRACT**

A double sealing valve includes a power cylinder having a driving axle, a valve body formed of a first and a second valve members, and a seal plate assembly within the valve body. Therein, the first valve member has an axle bore for the driving axle to pass through, and the second valve member has two valve holes oppositely disposed. The seal plate assembly has a driving frame connected to the driving axle, with plural roller assemblies disposed around the driving frame. The seal plate assembly has two seal plates disposed between two faces of the driving frame and the valve body, respectively. Each seal plate has plural driving grooves corresponding to the roller assemblies. The driving axle drives the seal plate assembly to seal the valve holes, with a sealing force produced therebetween by use of the roller assembly and the driving groove.

11 Claims, 9 Drawing Sheets

